

PCT

10/542926

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 27257	FOR FURTHER ACTION <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small>	
International application No. PCT/IL2004/000067	International filing date (day/month/year) 22/01/2004	(Earliest) Priority Date (day/month/year) 23/01/2003
Applicant RAMOT AT TEL AVIV UNIVERSITY LTD.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 9 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☒ **Certain claims were found unsearchable** (See Box II).

3. ☒ **Unity of invention is lacking** (see Box III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the drawings,

a. the figure of the **drawings** to be published with the abstract is Figure No. 2

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

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International application No.
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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 40
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-16, 25-39

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Claims Nos.: 40

Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-16,25-39

Processor in communication with said input mechanism and said thermal output receiver and configured to receive said thermal output from said thermal output receiver and to adjust said input mechanism so as to adjust said input to the targeted tissue based on said thermal output, and wherein said receiving and adjusting is performable during a real-time procedure

2. claims: 17-24

Flexible hollow wave guide placed in the endoscope conduit, wherein said waveguide comprises a hollow tube, a metal layer on the inner surface of the hollow tube, and a thin dielectric film of silver iodide over said metal layer

INTERNATIONAL SEARCH REPORT

International Application No

T/IL2004/000067

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61B1/04 A61B18/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 445 157 A (ADACHI RENSUKE ET AL) 29 August 1995 (1995-08-29) cited in the application figure 1	1-16, 25-39
Y	----- WO 02/102262 A (CARL ZEISS MEDITEC AG ;SCHROEDER ECKHARD (DE); ELBRECHT JENS (DE);) 27 December 2002 (2002-12-27) page 13, line 5 - line 20	1-16, 25-39
Y	----- US 2001/051783 A1 (LAX RONALD G ET AL) 13 December 2001 (2001-12-13) paragraph [0059] paragraph [0067] - paragraph [0072]	1-16, 25-39
Y	----- US 2003/004430 A1 (BEARMAN GREGORY H ET AL) 2 January 2003 (2003-01-02) paragraph [0083] - paragraph [0085] ----- -/--	1-16, 25-39

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

3 June 2004

Date of mailing of the international search report

06. 08 2004

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INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 103 804 A (ABELE JOHN E ET AL) 14 April 1992 (1992-04-14) figures 2,4 -----	1-16, 25-39
A	WO 02/32334 A (DANEK CHRISTOPHER JAMES ;BIGGS MICHAEL (US); HAUGAARD DAVE (US); B) 25 April 2002 (2002-04-25) page 33 - page 34 page 43 - page 47 -----	1-16, 25-39
A	US 2001/039415 A1 (FRANCISCHELLI DAVID E ET AL) 8 November 2001 (2001-11-08) paragraph [0098] - paragraph [0100] -----	1-16, 25-39
A	US 6 419 626 B1 (YOON INBAE) 16 July 2002 (2002-07-16) abstract; figure 9 -----	1
P,X	WO 03/026719 A (BLIWEIS MORDECHAI ;GALIL MEDICAL LTD (IL); AMIR URI (IL); SCHECHTE) 3 April 2003 (2003-04-03) the whole document -----	1
P,X	GOREN A, DAYAN A, GANNOT I: "Transendoscopic laser based surgical procedure within body cavities" OPTICAL FIBERS AND SENSORS FOR MEDICAL APPLICATIONS III, PROCEEDINGS OF SPIE, vol. 4957, 25 January 2003 (2003-01-25), - 27 January 2003 (2003-01-27) pages 34-45, XP002282445 the whole document -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

/IL2004/000067

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5445157	A	29-08-1995	JP 5228098 A	07-09-1993
WO 02102262	A	27-12-2002	DE 10129650 A1	02-01-2003
			WO 02102262 A1	27-12-2002
			EP 1395189 A1	10-03-2004
US 2001051783	A1	13-12-2001	US 5807308 A	15-09-1998
			US 5707349 A	13-01-1998
			AU 7696898 A	10-02-1999
			WO 9903410 A1	28-01-1999
			AU 2462197 A	26-11-1997
			AU 725853 B2	19-10-2000
			AU 6954896 A	26-11-1997
			CA 2252461 A1	13-11-1997
			CA 2252820 A1	13-11-1997
			CN 1216911 A	19-05-1999
			EP 0914068 A2	12-05-1999
			EP 0901348 A1	17-03-1999
			JP 2000514319 T	31-10-2000
			JP 2000509622 T	02-08-2000
			KR 2000010722 A	25-02-2000
			KR 2000010723 A	25-02-2000
			US 6152143 A	28-11-2000
			US 6179803 B1	30-01-2001
			WO 9741785 A2	13-11-1997
			WO 9741788 A1	13-11-1997
			US 6210355 B1	03-04-2001
			US 6416491 B1	09-07-2002
			US 6682501 B1	27-01-2004
			US 5843021 A	01-12-1998
			AU 1968697 A	10-09-1997
			AU 2135597 A	10-09-1997
			AU 2278297 A	10-09-1997
			AU 718288 B2	13-04-2000
			AU 6898896 A	10-09-1997
			EP 0957796 A1	24-11-1999
			JP 2001501491 T	06-02-2001
			WO 9730644 A1	28-08-1997
			WO 9730645 A1	28-08-1997
			WO 9730646 A1	28-08-1997
			WO 9730647 A1	28-08-1997
			US 5728094 A	17-03-1998
			US 5738114 A	14-04-1998
			US 5836906 A	17-11-1998
			US 5800379 A	01-09-1998
			US 5879349 A	09-03-1999
			US 5730719 A	24-03-1998
			US 5820580 A	13-10-1998
			US 5817049 A	06-10-1998
			US 6126657 A	03-10-2000
US 2003004430	A1	02-01-2003	US 6475159 B1	05-11-2002
			US 5935075 A	10-08-1999
			US 2003028114 A1	06-02-2003
			US 6615071 B1	02-09-2003
			US 2004111016 A1	10-06-2004
			AT 221338 T	15-08-2002
			AU 709432 B2	26-08-1999

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

/IL2004/000067

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2003004430	A1		AU 7368996 A CA 2231425 A1 DE 69622764 D1 DE 69622764 T2 EP 0955883 A1 JP 2000511786 T WO 9710748 A1	09-04-1997 27-03-1997 05-09-2002 24-04-2003 17-11-1999 12-09-2000 27-03-1997
US 5103804	A	14-04-1992	CA 2086668 A1 EP 0537274 A1 JP 5508789 T WO 9200697 A1	04-01-1992 21-04-1993 09-12-1993 23-01-1992
WO 0232334	A	25-04-2002	WO 0232334 A1 AU 1177902 A AU 1210901 A CA 2426144 A1 CA 2426167 A1 EP 1326549 A1 EP 1326548 A1 WO 0232333 A1 US 2003233099 A1 US 2004010289 A1	25-04-2002 29-04-2002 29-04-2002 25-04-2002 25-04-2002 16-07-2003 16-07-2003 25-04-2002 18-12-2003 15-01-2004
US 2001039415	A1	08-11-2001	US 2003195384 A1 US 2004138656 A1 AU 4987401 A AU 5732401 A EP 1278473 A1 WO 0182811 A1 WO 0180756 A1	16-10-2003 15-07-2004 12-11-2001 07-11-2001 29-01-2003 08-11-2001 01-11-2001
US 6419626	B1	16-07-2002	AU 5480699 A WO 0009001 A1	06-03-2000 24-02-2000
WO 03026719	A	03-04-2003	CA 2461164 A1 CA 2461217 A1 CA 2461627 A1 EP 1429820 A2 EP 1429679 A2 EP 1432341 A2 WO 03026719 A2 WO 03026476 A2 WO 03026477 A2 US 2003060762 A1 US 2004064152 A1 US 2003181896 A1	03-04-2003 03-04-2003 03-04-2003 23-06-2004 23-06-2004 30-06-2004 03-04-2003 03-04-2003 03-04-2003 27-03-2003 01-04-2004 25-09-2003

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

A control system (100) for minimally invasive surgery, and more particularly, for laser surgery using infrared laser (140) is provided. A feedback mechanism is provided to obtain thermographic information from the targeted site (110) and a processor (235) uses this thermographic information to monitor and control input parameters, including air flow, suction, and laser beam parameters. Furthermore, an infrared imaging fiber bundle (240) is used in combination with an infrared camera (250) to provide the thermographic information to the processor.

Specifically, the system and methods provided can be used to more effectively present very specific wavelengths of laser treatment, with capability of monitoring its effects and altering parameters at the time of treatment. Furthermore, means for thermographic analysis of the targeted area, wherein such analysis provides a guideline for the monitoring and altering of the controllable parameters is provided.